215.74

Anthropometric Measurements

Overview

Policy

Height (or length) and weight are important indicators of nutritional status. Measurements are taken for all participants to determine nutritional risk. See policy 360.65 for more information on cleaning scales, length boards, and height boards.

In this policy

This policy covers the following topics.

Use of Previously Obtained Measurements

Policy
Measurements obtained from other sources may be used if they meet certain conditions. Using such measurements promotes integration of health services.

Conditions for use
Measurements from other sources must be in writing from that source and reflect the participant's categorical status (verbal reports are not allowed). Use previously obtained measurements when they meet the criteria in this table.

If the participant is…	**Then……**
an infant	• the measurements must be ≤ 60 days old • birth weight and length cannot be used to certify infants
a child	• the measurements must be ≤ 60 days old Note: Measurements taken at 11 months of age (infant) may be used to certify a child at 12 months of age.
a woman	• the measurements must be ≤ 60 days old Note: Measurements taken during pregnancy are used to certify a pregnant woman through six weeks postpartum and cannot be used to certify her as a postpartum woman.

Measuring Recumbent Length

Policy

Use a horizontal length board to measure:

- Infants
- Children less than 2 years old, and
- Children 2 years old or older who are less than 31½ inches tall.

Equipment needed

Use the following equipment to measure and record recumbent length:

- 2006 WHO growth standards for birth to <24 months or 2000 NCHS/CDC growth chart for ages >24 months, and
- Horizontal length board with:
- Fixed headboard,
- Measuring tape in at least 1/8 inch increments, and
- Sliding footboard securely attached at right angles to the measuring surface.

Procedure

Follow these steps to accurately measure recumbent length.

Step	Action
1	Remove the child's shoes, hat, coat and any heavy or bulky clothing, hair ornaments and braids on top of the head.
2	Lay the child on a length board covered with thin paper, with the child's head against the headboard.
3	Have an assistant, such as the child's mother; use both hands to hold the child's head against the headboard with the child's eyes focused straight up.
4	Extend the child's legs so that both soles are positioned flat against the board.
5	Hold feet with one hand and straighten both knees with the other.
6	Recheck positioning.
7	Slide the footboard firmly towards the feet. The soles must rest flat against the footboard.
8	Read and record the measurements to the nearest 1/8-inch.

Measuring Standing Height

Policy
Measure standing height of:
• Children two years old and older
• All women up to 21 years of age

Note: Young women may continue to grow and increase in height until their 21st birthday. Therefore, measure the height of all young women at each visit until they reach this age. Then the WIC data system will automatically carry the height measurement forward to the next anthropometric record.

Children <31½ inches tall
If a child is 2 years old or older and is less than 31½ inches tall:
• Measure the child on the recumbent length board,
• Mark the check box for recumbent measurement in the data system, and
• Record the recumbent length and weight.

The cut-off for the 2000 NCHS/CDC growth chart for ages >24 months is based on standing height measurements. Therefore, recumbent length measurements may not be used to determine risks. However, these charts may be used as an assessment tool for evaluating growth in children aged 24-36 months who are not able to be measured for the standing height required. The data system will plot the measurement in red identifying it as an inaccurate measurement.

Equipment needed
Use the following equipment to measure and record standing height:
• 2000 NCHS/CDC growth charts for ages 2-5 years, and
• A portable or wall-mounted standing height board or stadiometer with:
• Sliding broca plane attached at a 90-degree angle, and
• Measuring tape in at least 1/8 inch increments.

Note: Do not use the height-measuring device on a balance beam scale.
The head piece is rarely attached at a 90-degree angle.

Measuring Standing Height, Continued

Procedure

Follow these steps to accurately measure standing height.

Step	Action
1	Ask participant to remove shoes, hat, coat, and other bulky clothing, hair ornaments or braids on top of head.
2	Ask participant to stand erect with feet parallel and heels together. Note: The participant's heels, buttocks, and shoulders should touch the wall or measuring surface, and eyes focused straight ahead.
3	Slide the broca plane down to rest on the head, compressing the hair.
4	Read and record the measurement to the nearest 1/8-inch. Note: If necessary, use a footstool to read the tape at eye level.

Weighing Infants

Equipment needed

Use the following equipment to accurately weigh infants:

- Infant balance beam or scale, or
- Infant cradle for use with an adult scale.

Procedure

Follow these steps to accurately weigh infants.

Step	Action
1	Line cradle with thin paper.
2	Place cradle on scale and balance scale to zero.
3	Remove the infant's excess clothing.
4	Place the infant in cradle.
5	Read and record weight to the nearest ounce.
6	Lock scale until next use.

Weighing Children and Adults

Equipment needed

Use the following equipment to accurately weigh children and adults:

• Balance beam scale with non-detachable weights, or

• Digital scale.

Procedure

Follow these steps to accurately weigh children and adults.

Step	Action
1	Balance the scale at zero.
2	Ask the participant to remove shoes and excess clothing, and check pockets for heavy objects such as keys. The participant's hands must be empty.
3	Ask the participant to step on the center of the scale platform with arms hanging at sides.
4	Read and record weight to the nearest ounce
5	Lock scale until next use.

Note: If a child is uncooperative or cannot stand up, weigh the child's caregiver holding the child, and then weigh the caregiver alone. Subtract the second value from the first to determine the child's weight. If your scale has a tare capability you can weigh the child's caregiver and tare out their weight before weighing them again holding the child.

Reducing Measurement Errors

Introduction
Accurate measurement is an important part of every growth evaluation. Inaccurate measuring and recording will result in poor service to clients.

Unusual measurements
Unusual measurements should be repeated to remove any doubt of error. Suggested best practices include the following:
• Record in nutrition care plan that measurement has been repeated for future reference.
• Record any contributing observations in the nutrition care plan (e.g., recent illness, tall parents, family disruptions such as divorce, description by parents as a "poor eater," medications that may affect appetite or water balance).
• Do an in-depth assessment and make appropriate referrals.

Ensuring accuracy
Follow these guidelines to ensure accurate measurements.
Equipment
• Balance scales after each use.
• Practice reading the fractional divisions (inches or ounces) on equipment.
• Check the accuracy of the scales regularly using standard weights, and arrange for calibration as needed.
• Set scale on uncarpeted floor. If necessary, place scales on board or piece of plywood.

Techniques
• Use accurate techniques. All staff should be trained in anthropometry.
• Be consistent. For example, when weighing, do not undress children completely in the summer and partially in the winter.
• If necessary, use a footstool to read height measurements at eye level.
• Record measurements immediately. Be careful of transposing numbers, reporting height for weight, etc.
• Remeasure and regraph any suspicious values.
• Calculate age accurately.

Documenting inaccurate measurements
There are times when it is difficult to obtain an accurate measurement. Examples include non-compliant children, ornate hair ornaments, casts, missing limbs, inability to stand, contractures, frequent movement, and faulty equipment. When any of these situations exist, obtain a measurement using the best technique possible under the circumstances. Then record the reason for potentially inaccurate measurements in the data system. This information will help with future interpretation of measurements and growth patterns.

Digital Scale Conversion Table

Using the table

Use this table to convert decimal readings (hundredths of a pound) to ounces.

Reading	Ounces		Reading	Ounces
.05	1		.55	9
.10	2		.60	10
.15	2		.65	10
.20	3		.70	11
.25	4		.75	12
.30	5		.80	13
.35	5		.85	13
.40	6		.90	14
.45	7		.95	15
.50	8			

Note: Digital scales, and therefore this conversion table, round to the nearest .05 pounds (five hundredths of a pound).

Converting Measurements to Decimals

Converting inches

Standing height measurements must be converted to decimals to calculate BMI. The table below lists the decimal equivalents for 1/8 inch increments.

Increments of an inch	Decimal equivalent	Reading	Ounces
1/8	0.125	5/8	0.625
2/8	0.250	6/8	0.750
3/8	0.375	7/8	0.875
4/8	0.500		

Converting ounces

Use the table below to convert ounces to decimals.

Ounces	Decimal equivalent	Ounces	Decimal equivalent
1	.06	11	.69
2	.13	12	.75
3	.19	13	.81
4	.25	14	.88
5	.31	15	.94
6	.38		
7	.44		
8	.50		
9	.56		
10	.63		

Note: The numbers in this table are different from those appearing on page 8 due to rounding rules.